NATURAL NEWS

The Field Museum
Exploring
The Earth And Its
People

March 31, 1995

CENTER FOR CULTURAL UNDERSTANDING AND CHANGE

MOLECULAR ANTHROPOLOGY AND THE NEW GUINEA RESEARCH PROGRAM

Pamela J. Stewart (Research Associate, Anthropology) and **Dr. Mary Ashley** (Research Associate, Zoology and Assistant Professor, Department of Biological Sciences, University of Illinois at Chicago) participated in, "Molecular Anthropology: Toward a New Evolutionary Paradigm," a conference held March 13-14, 1995 at Wayne State University School of Medicine, Detroit, Michigan. The conference attendees gathered in Detroit to honor Dr. Morris Goodman (a leading scientist in Molecular Anthropology) on the occasion of his 70th birthday. During the two days of intense scientific discussion, speakers such as Dr. Francisco Ayala (President of the American Association for the Advancement of Science) emphasized the use of molecular methods as integral to understanding human diversity, especially the diversity of genetic patterns in human populations.

Drs. Stewart and Ashley also met with prominent molecular anthropologists to discuss the development and implementation of the molecular component of *The New Guinea Research Program: Human Diversity Project*. This multifaceted project will be examining human diversity and exploring the population structure of the ethnological "community of culture" along the Sepik Coast of New Guinea, measuring human genetic diversity using state-of-the-art molecular techniques. **Dr. John Terrell** (Curator of Anthropology, New Guinea Research Program) is the Director of this project; **Dr. Robert L. Welsch** (Adjunct Associate Curator of Anthropology, New Guinea Researh Program) is the social anthropologist on the project; and **Dr. Jeremy Martinson** (Oxford University) is a molecular anthropology member of the project.

Drs. Stewart and Ashley also met with Dr. John Moore (University of Florida) and Dr. Kenneth Weiss (Pennsylvania State University) and discussed the planning of the global *Human Genome Diversity Project*. This project is being designed to examine the differences and similarities in the genetic make-up of human populations in an anthropologically significant fashion.

Dr. Jeremy Martinson presented some of his current research results at the Field Museum's New Guinea Research Seminar series on March 29. His presentation was entitled *Molecular Genetics in the Pacific: Internal Structure Analysis of Human Alpha-Globin VNTR Alleles.*

CENTER FOR EVOLUTIONARY AND ENVIRONMENTAL BIOLOGY

BARRY CHERNOFF RETURNS FROM VENEZUELAN EXPEDITION

Barry Chernoff (Zoology) participated in a joint expedition to study the fishes of the Rio Cuncunuma, Amazonas State of Venezuela, during February and early March. The expedition was a collaboration between The Field Museum, Instituto de Zoologia Tropical, Universidad Central de Venezuela and the Ministerio de Agripiscicultura (FONIAIP). Expedition participants included Dr. Hector Lopez, Dr. Anna Bonilla, Dr. Theresa M. Bert (Florida Marine Resources Institute) and Directora Justa Fernandez. The Rio Cunucunuma is a large blackwater river on the upper Orinoco that runs through a national park and has never been explored by scientists. The river and region are also sacred lands of the Yekuana Makiritare who have requested a survey of the fishes of their region. The Yekuana Makiritare are very interested in conservation of biodiversity in their sacred lands. The fish samples will be worked up jointly by The Field Museum and Universidad Central de Venezuela. The biochemical samples will be processed at The Field Museum, in Florida and in Caracas. Several new species of characiform fishes (tetras and their allies) were discovered. Furthermore, the capture of *Leporinus brunneus*, the fire-tailed headstander, confirmed an important biogeographic hypothesis about the evolution of former drainage-connections in the upper Orinoco River that was published previously by Dr. Chernoff and Dr. Antonio Machado-Allison.

NOON BALLOON

The Noon Balloon for March 28, 1995 was given by Dr. Patrick Herendeen, Adjunct Assistant Curator, Department of Geology. Pat discussed aspects of Cretaceous floras of the Atlantic Coastal Plain. During the Cretaceous flowering plants experienced a major diversification. Pat's temporal focus was the late Cretaceous, the Campanian about 75-80 mya. His spatial focus involved several localities in Georgia and North Carolina that have yielded a rich assembleage of plant fossils. Recent work has focused on preserved flowers and fruits, in addition to the traditional data obtained from larger fossils such as leaves. The floral parts had been naturally converted into charcoal as a result of wild fires, transported to other sites and preserved in very fine alluvial clay deposits without significant compression. The resultant materials are fully three dimensional in aspect and permit a level of detailed study only normally possible with contemporary specimens. Pat used two of the fossil taxa to address questions in the evolution of specific major clades of flowering plants. Observations based upon careful dissection of the floral parts of a new species show relationships with the Fagaceae, comprising oaks, beech, chestnut. However other characters indicate affinities with Nothofagus. Initial analyses suggest the fossil is basal in the evolution of these groups, and have prompted reassessment of the position of Nothofagus. Pat's second example drew on specimens segregated by Jennifer Keller while she was a senior undergraduate intern student at the museum. The undescribed plant taxon showed affinities with the Ericales, a group traditionally including heaths, blueberries and kiwi fruit, but recently emmended to include the pitcher plants. Pat's detailed dissections provided a wealth of

characters to permit comparison of the fossil taxon with contemporary groups. He discussed results of cladistic studies to support placement of the fossil within the family including kiwi fruit. He showed that data from the fossil actually improved resolution of data sets based only on contemporary taxa. Pat's presentation was augmented by superb SEM micrographs of these fossil flowers more than 70 million years in age.

ENGEL RETURNS FROM NEW ZEALAND, LEAVING SUMMER BEHIND

***John Engel** returned from two months of field studies in New Zealand.* He and his colleague, **Rudolf Schuster** (Research Associate, Department of Botany), worked out of the University of Auckland, and traveled widely in both North and South Islands. John and Rudy were often accompanied by their gracious host, Dr. John Braggins of the University of Auckland. The field work, which was supported by a National Geographic Society grant, was in connection with the first volume (nearing completion) of their three volume account of the liverworts of New Zealand, and also in connection with several monographic studies. Effort was made to illustrate the oil-bodies of a considerable number of liverworts. Oil-bodies are cellular inclusions peculiar to liverworts, and are of considerable taxonomic value. The oil-bodies, however, offer a challenge--one must study them soon after collecting the specimen, since they disappear upon drying of the plant. New Zealand is normally a very wet country (which is a primary reason for strong representation of liverworts and mosses), but this was not the case during the New Zealand summer months of January-March this year. The lack of rainfall and the problems that the near record drought caused for farmers and the New Zealand economy were of particular concern.

RIEPPEL'S REPTILE RESEARCH ROUTE

Olivier Rieppel (Geology) returned from a four-week trip through European Museums in pursuit of his N.S.F.-funded research on Mesozoic marine reptiles. Visits to museums in Paris, Barcelona, Rome, Vienna and Stuttgart completed the survey of Sauropterygia from the Middle Triassic of Europe. The systematic revision of stem-group Sauropterygia starts to generate some interesting phylogenetic patterns. The Central European epicontinental sea (Muschelkalk Basin) appears to have been invaded through the Carpathian Gate by Sauropterygia with Asiatic affinities. From the Muschelkalk Basin, several of the key taxa spread southwards into the Southern Alpine intraplatform basin facies along the northwestern shore of the ancient Mediterranean Sea (Tethys). The rate of morphological innnovation as measured by taxic diversity was distinctly increased in the fragmented habitat of the southern Alpine realm. Some taxa returned from the Alpine realm into the Germanic basin in the Upper Triassic. This evolutionary scenario will be tested by a future review of the sauropterygian faunas of Rumania, Israel and China.

Darlene Pederson is retiring on Thursday, April 13, after seventeen years at the Museum. Please stop in Dining Rooms C&D between 11:30 a.m. and 1:00 p.m. on April 13 to enjoy coffee and cake and to wish Darlene and her husband well.

WELCOME! New Employees -- February, 1995

Ball, Alex	Zoology	x273
Brandabur, Paula M.	Exhibits	x624
Brinkman, Paul	Geology	x336
Ip, Barbara	Auxiliary Services	x864
Passaglia, Kathryn	Geology	x296
Rehder, Paul	Stationary Engineer	x222
Sperling, Marcy C.	Women's Board	x870

EMPLOYEE ANNIVERSARY, March 1995

Jesus Alvarez	Housekeeping	5 years
Lavida Rogers	Housekeeping	10 years

NEW JOB OPENINGS

Below are the latest job opportunities in the Museum. For further information and previous job openings, please check the Career Opportunities listing published by the Personnel Department.

Coordinator of Sponsored Programs
Secretary II -- Corporations & Foundations
Housekeeper I
Visitor Services Representative I (2 positions)
Stationary Engineer
Security Officer I (2 positions)
Visitor Program Volunteer Coordinator -- Education Department
Exhibit Preparator II -- Harris Loan Center

ANYONE NEED PLASTIC CONTAINERS?

I go through a fair amount of plastic containers of different shapes and sizes that at one time contained various supplements for horses. They make good small buckets or containers for just about anything. All have lids, some are screw-on. Does anyone have a use for these? If so, contact me. -- **Lucy Bukowski** (x366)

ENTERTAINMENT NEEDED

Anybody tape the Academy Awards on March 27? I'll buy the tape or swap for a new high-grade blank. Call me. -- **Mark Alvey** (x293)